

Appl. No.: 09/322,283  
Amdt. dated: November 21, 2005  
Reply to Office action of May 20, 2005

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims**

**Claims 1-11 (Cancelled)**

**Claim 12 (Currently Amended): An optical system comprising:**

an optical transmitter, said optical transmitter including an optical modulator for modulating an RF input signal onto ~~an~~ one or more optical carrier signal signals having multiple defining at least two wavelengths and providing RF modulated optical signals on a single one or more output port ports and transmitting said RF modulated output signals available on said single one or more output port ports, said optical transmitter including a bias control circuit configured to operate optical modulator so that said at least two wavelengths have relatively equal power but opposite slope;

an optical receiver for demodulating said multiple RF modulated optical signals and providing multiple RF output signals, said optical receiver including a control circuit having a wavelength division demultiplexer for demultiplexing said RF output signals and generating multiple optical signals at each of said multiple wavelengths, said control circuit also including a multiple photodetectors for converting said multiple optical signals to multiple electrical signals and a summing junction for subtracting said multiple electrical signals to provide an output signal; and

an optical link connecting said optical transmitter and said optical receiver, wherein said optical link is in free space.

**Claim 13 (Currently Amended): An optical system comprising:**

an optical transmitter, said optical transmitter including an optical modulator for modulating RF input signals onto ~~an~~ one or more optical carrier signal signals having defining at least two multiple wavelengths and generating RF modulated optical signals at a single one or

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more output port ports and transmitting said RF modulated output signals over an optical link by way of said and said single one or more output port ports;

an optical demodulator for demodulating said RF modulated optical signals and providing RF output signals; and

an said optical link connecting said optical transmitter and said optical receiver, wherein said optical modulator is a Mach-Zehnder modulator includes an RF input port, a bias voltage input port, an optical carrier input port, and an optical output port, and wherein said optical receiver includes a circuit includes a wavelength division demultiplexer for demultiplexing said RF output signals and generating multiple signals at each of said multiple at least two wavelengths, said circuit also including a multiple photodetectors for converting said multiple optical signals to multiple electrical signals and a summing junction for subtracting said multiple electrical signals to provide output signals and wherein said optical transmitter includes a bias control circuit configured to operate optical modulator so that said at least two wavelengths have relatively equal power but opposite slope.

Claim 14 (Currently Amended): The optical system as recited in claim 13, wherein said optical transmitter includes a wavelength division multiplexer (WDM) and said one or more optical carrier signal signals having multiple at least two wavelengths is formed from a plurality of carrier signals having different wavelengths for providing an optical carrier signal to said optical carrier input port of said Mach-Zehnder modulator, said optical transmitter also including a plurality of sources of carrier signals at different wavelengths which are applied to said WDM.

Claim 15 (Cancelled)

Claim 16 (Cancelled).

Claim 17 (Cancelled).

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**Claim 18 (Previously Presented):** The optical system as recited in claim 15, wherein said optical receiver includes a wavelength division multiplexer (WDM) for receiving said RF modulated optical signal and demultiplexing said RF modulated optical signal into separate wavelength signals and a plurality of photodetectors coupled to said WDM for photodetecting the separate wavelength signals separately and generating corresponding multiple photodetector current signals, said optical receiver also including a summing junction for summing said photodetector currents.

**Claim 19 (Original):** The optical system as recited in claim 18, further including one or more optical amplifiers.

**Claim 20 (Original):** The optical system as recited in claim 19 wherein said one or more optical amplifiers are connected to one or the other of said optical transmitter and said optical receiver.

**Claim 21 (Original):** The optical system as recited in claim 20, including at least two optical amplifiers, one optical amplifier connected to said optical transmitter and one optical amplifier connected to said optical receiver.

**Claims 22-24 (Cancelled).**